

Remarks

Applicant has amended Claims 1-9. Applicant respectfully submits no new matter has been added by the present amendment. Support for the amendment can be found generally throughout the text, specifically at page 6, lines 3-7 and the Examples.

Specification Objection

The specification stands objected to as failing to provide proper antecedent basis for claimed subject matter. Applicant has amended the Specification at page 14 to provide proper antecedent basis for the claimed subject matter and request withdrawal of this ground of objection.

Claim Objection

Claims 1-9 stand objected, Applicant has amended Claims 1-9 as requested in the Office Action and accordingly request withdrawal of this ground of rejection.

Claim Rejection under 35 U.S.C. § 112

Claim 4 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant has amended Claim 4 to clarify that the composite may comprise a curing system selected from the group consisting of a peroxide curing system and a sulfur curing system.

Claim Rejection under 35 U.S.C. § 102(b)

Claims 1-5 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Fujii et al (WO 97/36956 believed to correspond to US Patent No. 6,489,385). Applicant respectfully traverses this ground of rejection.

Applicant submits to anticipate a claim, the cited references must teach each and every element of the claimed invention, either explicitly or inherently. Applicant submits the present invention is directed to polymer composite comprising at least

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one, optionally hydrogenated, nitrile rubber polymer having a Mooney viscosity (ML 1+4 @ 100°C) below 30 and a polydispersity below 2.7, at least one filler and optionally at least one cross-linking agent.

Applicant submits Fujii et al does not teach each and every element of the claimed invention. Fujii et al discloses a nitrile containing copolymer rubber having a Mooney viscosity lowered via high shear in the presence of an aging inhibitor. According to Fujii et al, the rubber has a Mooney viscosity of 5-35 and a molecular weight distribution of 3-5.

Whereas the present invention is directed to composites comprising low Mooney, optionally hydrogenated polymers. The low Mooney optionally hydrogenated polymers of the composite of the present invention are prepared via a metathesis reaction in the presence of a metathesis catalyst. Accordingly, the present invention is directed to composites comprising at least one, optionally hydrogenated, nitrile rubber polymer having a Mooney viscosity (ML 1+4 @ 100°C) below 30 and a polydispersity below 2.7, at least one filler and optionally at least one cross-linking agent.

Therefore, Applicant submits the Fujii et al fails to teach each and every element of the claimed invention and accordingly Applicant requests withdrawal of this ground of rejection.

Claim Rejection under 35 U.S.C. § 102(b)

Claims 1-2, 4 and 5 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Musch et al (US Patent No. 5,187,232). Applicant respectfully traverses this ground of rejection.

Applicant submits to anticipate a claim, the cited references must teach each and every element of the claimed invention, either explicitly or inherently. Applicant submits the present invention is directed to polymer composite comprising at least

one, optionally hydrogenated, nitrile rubber polymer having a Mooney viscosity (ML 1+4 @ 100°C) below 30 and a polydispersity below 2.7, at least one filler and optionally at least one cross-linking agent.

Applicant submits Musch et al does not teach each and every element of the claimed invention. Musch et al discloses mixtures of polychloroprene and hydrogenated nitrile rubber. According to Musch et al the hydrogenated nitrile rubbers suitable generally have Mooney viscosities in the range of 10 to 150 (ML 1+4 @ 100°C). In addition, Applicant submits the exemplified HNBR, Therban® 1706S, (currently sold under the name Therban® C3446) has a polydispersity index of 2.99.

Whereas the present invention is directed to composites comprising low Mooney, optionally hydrogenated polymers. The low Mooney optionally hydrogenated polymers of the composite of the present invention are prepared via a metathesis reaction in the presence of a metathesis catalyst. Accordingly, the present invention is directed to composites comprising at least one, optionally hydrogenated, nitrile rubber polymer having a Mooney viscosity (ML 1+4 @ 100°C) below 30 and a polydispersity below 2.7, at least one filler and optionally at least one cross-linking agent.

Therefore, Applicant submits the Musch et al fails to teach each and every element of the claimed invention and, accordingly, Applicant requests withdrawal of this ground of rejection.

Claim Rejection under 35 U.S.C. § 102(b)

Claims 1-2, 4 and 5 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Aonuma et al (US Patent No. 5,432,226). Applicant respectfully traverses this ground of rejection.

Applicant submits to anticipate a claim, the cited references must teach each and every element of the claimed invention, either explicitly or inherently. Applicant submits the present invention is directed to polymer composite comprising at least one, optionally hydrogenated, nitrile rubber polymer having a Mooney viscosity (ML 1+4 @ 100°C) below 30 and a polydispersity below 2.7, at least one filler and optionally at least one cross-linking agent.

Applicant submits Aonuma et al does not teach each and every element of the claimed invention. Aonuma et al discloses rubber formulations containing HNBR, an organopolysiloxane, a crosslinking controller, a triallyl isocyanate, optional filler and a peroxide crosslinking agent. According to Aonuma et al suitable HNBR's have a Mooney up to 70. Aonuma et al does not teach an HNBR having the claimed low Mooney and polydispersity Index.

Whereas the present invention is directed to composites comprising low Mooney, optionally hydrogenated polymers. The low Mooney optionally hydrogenated polymers of the composite of the present invention are prepared via a metathesis reaction in the presence of a metathesis catalyst. Accordingly, the present invention is directed to composites comprising at least one, optionally hydrogenated, nitrile rubber polymer having a Mooney viscosity (ML 1+4 @ 100°C) below 30 and a polydispersity below 2.7, at least one filler and optionally at least one cross-linking agent.

Therefore, Applicant submits the Aonuma et al fails to teach each and every element of the claimed invention and accordingly Applicant requests withdrawal of this ground of rejection.

Claim Rejection - 35 USC § 103(a)

Claims 6-9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujii et al in view of Graefe (U.S. Patent No. 5,002,475). Applicant respectfully traverses this ground of rejection and incorporates the comments from above.

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Applicant respectfully submits that "in order to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference. Second, there must be a reasonable expectation of success. Finally, the prior art references must teach or suggest all the claims limitations. The teachings or suggestions to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicants' disclosure." See MPEP § 2142, citing In re Vaack, 947 F.2d 488, 20 USPQ 2d. 1438 (Fed. Cir. 1991).

Applicant submits Fujii et al in view of Graefe does not render the present invention obvious. As discussed in detail above, Fujii et al does not teach each and every element of the claimed invention. Fujii et al discloses a nitrile containing copolymer rubber having a Mooney viscosity lowered via high shear in the presence of an aging inhibitor. According to Fujii et al the rubber has a Mooney viscosity of 5-35 and a molecular weight distribution of 3-5.

Whereas the present invention is directed to a process for the manufacture of a shaped article comprising the step of injection molding, a polymer composite comprising at least one, optionally hydrogenated, nitrile rubber polymer having a Mooney viscosity (ML 1+4 @ 100°C) below 30 and a polydispersity index below 2.7, at least one filler and at least one cross-linking agent. Accordingly, Applicants submit Fujii et al does not suggest the present invention.

Further, Applicant submits the deficiencies of Fujii et al are not overcome by combination with Graefe. Graefe merely discloses a reaction injection molding apparatus. Graefe does not suggest a composite as claimed or a process for the manufacture of a composite comprising a nitrile rubber polymer having a Mooney viscosity (ML 1+4 @ 100°C) below 30 and a polydispersity index below 2.7.

Accordingly, Applicant submits the combination of Fujii et al and Graefe does not teach or suggest the present invention. Therefore, Applicant requests withdrawal of this ground of rejection.

Claim Rejection - 35 USC § 103(a)

Claims 6-9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Musch et al in view of Graefe (U.S. Patent No. 5,002,475). Applicant respectfully traverses this ground of rejection and incorporates the comments from above.

Applicant submits Musch et al in view of Graefe does not render the present invention obvious. As discussed in detail above, Musch et al discloses mixtures of polychloroprene and hydrogenated nitrile rubber. According to Musch et al the hydrogenated nitrile rubbers suitable generally have Mooney viscosities in the range of 10 to 150 (ML 1+4 @ 100° C). In addition, Applicants submit the exemplified HNBR, Therban® 1706S, currently sold under the name Therban® C3446, has a polydispersity index of 2.99.

Whereas the present invention is directed to process for the manufacture of a shaped article comprising the step of injection molding a polymer composite comprising at least one, optionally hydrogenated, nitrile rubber polymer having a Mooney viscosity (ML 1+4 @ 100°C) below 30 and a polydispersity index below 2.7, at least one filler and at least one cross-linking agent. Accordingly, Applicant submits Fujii et al does not suggest the present invention.

Further, Applicant submits the deficiencies of Musch et al are not overcome by combination with Graefe. Graefe merely discloses a reaction injection molding apparatus. Graefe does not suggest a composite as claimed or a process for the manufacture of a composite comprising a nitrile rubber polymer having a Mooney viscosity (ML 1+4 @ 100°C) below 30 and a polydispersity index below 2.7.

Accordingly, Applicant submits the combination of Musch et al and Graefe does not teach or suggest the present invention. Therefore, Applicant requests withdrawal of this ground of rejection.

Provisional Claim Rejection (I)

Claims 1-9 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 12-14, 16 and 17 of co-pending Application No. 10/728,029. Applicant respectfully traverses this provisional rejection.

Further, both the present application and Application No. 10/728,029 are pending, allowable subject matter, notwithstanding the provisional obviousness-type double patenting rejection has not been indicated in either application. Where a provisional rejection under the judicially created doctrine of obviousness-double patent is made between two applications MPEP § 804(I)(B) states that "if the provisional double patenting rejection in one application is the only rejection remaining in that application, the examiner should then withdraw that rejection and permit the application to issue as a patent, thereby converting the provisional double patenting rejection in the other application into a double patenting rejection as the time the one applications issues as a patent." Therefore, it is not evident which of the pending applications will become allowable first, and any action by Applicant with regard to this provisional rejection is premature.

The Office Action also states that Claims 1-9 are directed to an invention not patentably distinct from Claims 12-14, 16 and 17 of commonly assigned co-pending Application No. 10/728,029. Applicant traverses this statement and submits the inventions were commonly owned at the time the invention in this application was made as illustrated by the assignment documents from co-pending Application No. 10/278,029 submitted in Appendix 1. Accordingly, Applicant submits that the

inventions were commonly owned at the time the invention in this application was made and therefore a rejection under 35 U.S.C. § 103(a) based upon the commonly assigned cases as a referenced under 35 U.S.C. § 102(f) or (g) or (e) for applications filed on or after November 29, 1999 is precluded.

Provisional Claim Rejection (II)

Claims 1-9 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1-7 of co-pending Application No. 10/648,601. Applicant respectfully traverses this provisional rejection.

Further, both the present application and Application No. 10/648,601 are pending, allowable subject matter, notwithstanding the provisional obviousness-type double patenting rejection has not been indicated in either application. Where a provisional rejection under the judicially created doctrine of obviousness-double patent is made between two applications MPEP § 804(I)(B) states that "If the provisional double patenting rejection in one application is the only rejection remaining in that application, the examiner should then withdraw that rejection and permit the application to issue as a patent, thereby converting the provisional double patenting rejection in the other application into a double patenting rejection as the time the one application issues as a patent." Therefore, it is not evident which of the pending applications will become allowable first, and any action by Applicant with regard to this provisional rejection is premature.

The Office Action also states that Claims 1-9 are directed to an invention not patentably distinct from Claims 1-7 of commonly assigned co-pending Application No. 10/648,601. Applicant traverses this statement and submits the inventions were commonly owned at the time the invention in this application was made as illustrated by the assignment documents from co-pending Application No. 10/648,601

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submitted in Appendix 2. Accordingly Applicant submits that the inventions were commonly owned at the time the invention in this application was made and therefore a rejection under 35 U.S.C. § 103(a) based upon the commonly assigned cases as a referenced under 35 U.S.C. § 102(f) or (g) or (e) for applications filed on or after November 29, 1999 is precluded.

Respectfully submitted,

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